1.1 Our numbers are growing fast

Stage 1 - Desired Results

Established Goals:

- •Understand how and why population increases
- Develop numeracy, thinking and literacy skills
- •Explore, understand and explain the factors that affect birth and death rates

Understandings:

Students will understand that

- a population rises when there are more births than deaths
- •the world's population is rising rapidly by about 150 people a minute!
- •the birth rate is the number of live births per thousand people in a year
- •the death rate is the number of deaths per thousand people in a year
- •that many factors influence birth and death rates. For example, the quality of health care is one factor

Essential Questions:

- •How many people are on the Earth right now?
- •What happens to the population when more people are born than die? What happens to it when more die than are born?
- •What do BC and AD mean?
- •How many years ago was 1000 BC?
- •What would it have been like, with so few humans in such a big world?
- When did the world population really start to take off? Why do you think it was?
- •Could the world's population fall? What might cause that?

Knowledge:

Students will know...

- •the approximate current world population
- •factors that affect birth and death rates

Skills:

Students will be able to...

- •define key vocabulary
- explain that population rises when there are more births than deaths
- •plot, extrapolate and annotate a graph
- •describe the shape of a world population graph
- •give birth and death rates as a percentage

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.7
- •Workbook Unit 1.1
- •Teacher's Handbook, p.22. Ideas for a Starter
- •Teacher's Handbook, p.23. Ideas for Plenaries
- •Teacher's Handbook, p.28. Further suggestions for class and homework, Activities 1 12.

Other Evidence:

- Motivation
- $\bullet Engagement$
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions

•Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read about how population increases, using one family over several generations as an example
- •Suggest factors that cause births and deaths to rise and fall
- •Deduce consequences of events on birth and death rates
- •Examine and describe a population graph
- •Plot, extrapolate and annotate a population graph

1.2 So where is everyone?

Stage 1 - Desired Results

Established Goals:

- •Evaluate the relationship between human societies and the environment
- Develop geography and thinking skills

Understandings:

Students will understand that...

- •people are not spread evenly around the world. There are patterns of population distribution
- these patterns are the result of several factors: climate, relief, access to water and other resources, and to trade routes, security, job opportunities, and so on

Essential Questions:

- What did our ancestors have to think about in choosing where to settle? Did humans everywhere think like that?
- •What's the difference between *population distribution* and *population density*?
- •Which continent has the most people? Which has the least?

Knowledge:

Students will know...

 examples of densely and sparsely populated countries or regions.

Skills:

Students will be able to...

- define key vocabulary
- •describe the pattern f population around the world
- •analyze and compare maps
- •find and explain correlations

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.9
- •Workbook Unit 1.2
- •Teacher's Handbook, p.24. Ideas for a Starter
- •Teacher's Handbook, p.25. Ideas for Plenaries
- •Teacher's Handbook, p.29. Further suggestions for class and homework, Activities 13 19

Other Evidence

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher

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	•Reactions	
	•Respect to others and different opinions	

Stage 3 - Learning Plan

Learning Activities:

- •Study a map showing population distribution
- •Compare different maps and search for correlations between climate and population distribution
- •Explain correlations between climate and population distribution
- •Write a paragraph about the world's population distribution

1.3 Our impact on the planet

Stage 1 - Desired Results

Established Goals:

- •Understand how we depend on natural resources
- •Learn which resources we are dependent on
- •Understand how and why we put pressure and the Earth's resources and the current and future impact on the

Understandings:	Essential Questions:
Students will understand that •as population rises, we use more and more of the Earth's resources	•What kinds of things will we depend more and more of as the population rises?
24.0.0004.000	•Could our population growth cause any problems?
•we also produce more and more waste	
•our consumption of resources and production of	•What is the definition of resources?
waste has a huge impact on the environment	•Can you think any positive impacts that humans have had on the planet?
 we are learning to find more sustainable to live 	•If no woman had more than one child, what would happen to the population?
	•Do you think governments should try to stop people having lots of children? Do you know anywhere this is happening?
	•What do you think was the most important new idea you came across in this lesson?
Knowledge:	Skills:
Students will know	Students will be able to
what a resources is	•define the key vocabulary
which resources we depend on	•describe how we are impacting the planet

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.11
- Workbook Unit 1.3
- •Teacher's Handbook, p.26. Ideas for a Starter
- •Teacher's Handbook, p.27. Ideas for Plenaries
- Teacher's Handbook, p.29. Further suggestions for class and homework, Activities 20 − 25
- Essay

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Examine pictures, identify and classify resources we are dependent on.
- Predict consequences of abusing our planet.
- •Write a dialogue between 2 endangered species of animal to explore and explain cause and effect of human's overreliance on the Earth's resources.
- •Discuss possible ways to reduce our impact on the planet including controversial topics such as a one-child policy

2.1 Waves and tides

Stage 1 - Desired Results

Established Goals:

- •Understanding and explaining what causes waves and tides
- •Understanding the effects of swash and backwash on the coastline
- •Being able to make predictions about wave size and strength by examining a diagram

Understandings:

Students will understand that...

- waves are caused by wind dragging on the surface of the water
- •length of water the wind blows over is called the fetch. The stronger the wind, the longer it blows for, and the longer the fetch, the larger the wave will be.
- •waves 'break' in shallow water. The water that rushes up the sand is the swash; it rolls back into the sea as backwash.
- •when the swash is stronger than backwash, material is deposited. If the backwash is stronger than the swash, the beach is eroded.
- the moon and sun exert a gravitational force on the Earth; so they draw the seas upwards, on the side facing them. As a result, the water level falls everywhere else around the Earth.
- •rises and falls in water level are called tides. There are high tides at a place twice a day, and low tides in between.
- •that as the moon travels around the Earth, and the Earth around the sun, the combined pull of the moon and sun changes; so the heights of the tides change too.

Essential Questions:

- •What causes waves?
- •What causes tides?
- •Do we get waves in rivers? Why? / Why not?
- •What waves got to do with geography? What do you think they are leading on to?

Knowledge:

Students will know...

- •what waves and tides are
- •what causes waves and tides
- •how waves effect the coast
- •how we use waves

Skills:

Students will be able to...

- define key vocabulary
- •explain what causes tides and waves
- •examine a diagram and photographs and apply learned knowledge
- •make predictions and deductions from visual evidence

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.15
- •Workbook Unit 2.1
- •Teacher's Handbook, p.32. Ideas for a Starter
- •Teacher's Handbook, p.33. Ideas for Plenaries
- •Teacher's Handbook, p.48. Further suggestions for class and homework, Activities 5 9

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Read about the factors that cause waves and tides
- •Examine photographs and make deductions from photographic evidence

•Examine a diagram and apply learned knowledge to make and explain predictions

2.2 The waves at work

Stage 1 - Desired Results

Established Goals:

- •Learning how waves shape the coast
- •Understanding the processes of erosion, transport and deposition and their roles in shaping the coast

Understandings:

Students will understand that...

- •waves continually shape the coastline by eroding, transporting, depositing material. Weathering helps this process by making erosion easier.
- •waves erode rock by different process.
- •the end products of erosion are pebbles, sand, and mud.
- the way waves roll in and out, and their direction, means that most eroded material is carried parallel to the shore.
- •beaches form in sheltered areas where the waves deposit sand or shingle.
- •some beaches have groynes down the beach, to stop sand being carried away by longshore drift.

Essential Questions:

- •Why are pebbles round? Where do you think they came from originally? Where did the sand come from? Why are the grains so small?
- •Are waves affecting the rocks? In what way?
- •What do the rivers do? Is it the same as for the sea? Are there any differences?
- •What is weathering? Do you think it makes erosion harder, or easier? Why is that?
- •Is erosion along the coast as fast on a calm day as on a windy day? Why or why not?
- •Do you think erosion and deposition could be causing us problems?

Knowledge:

Students will know...

- •what erosion, transport and deposition are
- •the different process of wave erosion
- •what longshore drift is
- •what groynes are and do

Skills:

Students will be able to...

- •define and explain key vocabulary
- •describe the processes of erosion
- •analyze photos and drawings, apply learned knowledge to make deductions and explain, giving evidence
- •figure out prevailing wind and wave direction by examining transport and deposition along a coastline

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.17
- Workbook Unit 2.2
- •Teacher's Handbook, p.34. Ideas for a Starter
- •Teacher's Handbook, p.35. Ideas for Plenaries
- •Teacher's Handbook, p.48. Further suggestions for class and homework, Activities 10 12
- •Group work to show processes described in this unit

Other Evidence:

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the

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	teacher
	•Reactions
	•Respect to others and different opinions
Stage 3 - L	earning Plan
Learning Activities:	
 Examine an annotated picture of a coastline and the pro 	ocess at work
Analyze photographs and make deductions about wave	action on coastlines from photographic evidence
 Analyze drawings and apply learned knowledge to make 	e and explain deductions
L	
2.3 Landforms cre	eated by the waves
	esired Results
Established Goals:	
•Learning about different landforms created along the coa	ast by erosion, transport and deposition
 Understanding and being able to explain how these lands 	forms were created by drawing annotated sketches
Understandings:	Essential Questions:
Students will understand that	•Why do you think coastal landforms have different shapes?
 erosion and deposition by waves result in different coastal landforms. 	•Can you name any landforms?
•waves erode different types of rock at different rates. Hard	
rock erodes more slowly than soft rock. The result is	•How long will it take the cliffs to retreat 10 metres?
headlands, and bays. •waves cut notches in a cliff face. When these get deep	•What would happen if you have a house on a cliff top?
enough, the overhanging cliff topples into the sea. So	
the cliff face recedes, leaving a wave-cut platform.	•Why is the coast so different in different places?
•waves can attack cracks in headlands, enlarging them into caves. In time these wear right through to form arches.	
Arches collapse, leaving pillars called stacks, which wear	
away to stumps.	
•sand carried by longshore drift may be deposited in bays,	
forming beaches. Or in the sea, where the coast changes direction sharply, forming spits.	
•Understand that silt and mud collect in the sheltered area	
behind a spit, forming a salt marsh	
Knowledge:	Chille
Students will know	Skills:
•the different features found along the coast	Students will be able to •define key vocabulary
•which processes form each feature	•identify coastal landforms
	•describe how these landforms were formed by drawing annotated sketches
 that different kinds of rock erode at different rates 	•analyze diagrams and photographs and make and explain

predictions

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.19
- •Workbook Unit 2.3
- •Teacher's Handbook, p.36. Ideas for a Starter
- •Teacher's Handbook, p.37. Ideas for Plenaries
- •Teacher's Handbook, p.48. Further suggestions for class and homework, Activities 13 19
- Student's draw annotated sketches to show how coastal features are formed

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Examine an annotated picture of a coastline with its features and the processes at work
- •Examine diagrams that show the processes involved in forming coastal landforms
- •Analyze different features and deduct the processes by which they were formed
- •Draw annotated diagrams to explain how landforms were created
- •Draw an annotated sketch from a photograph
- •Draw a diagram to show predicted erosion on different kinds of rock

2.4 The coast and us

Stage 1 - Desired Results

Established Goals:

- •Learning how we humans use the coast
- Understanding why people settled along the coast
- •Evaluating the advantages and disadvantages of living on a coast

Understandings:

Students will understand that...

- •the sea shapes and changes the coast and so do we, in the ways we use it.
- •coastal settlements are likely to have specific functions related to the sea, and these bring related employment.

Essential Questions:

- •How does having a coast help a country's economy today? How did it help in the past and how might it help in the future?
- •Who owns the coast?
- Which do you thing changes the coastline faster, humans or the sea? Which can be controlled? Which do you think is the most likely to cause problems/conflicts?

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	•Why did settlers choose to settle on the coast?	
Knowledge:	Skills:	
Students will know	Students will be able to	
•Why early settlers choose the coast to settle	•define key vocabulary	
,,	•identify ways we use the coast	
 Economic activities related to the coast 	•recognize and describe how humans change and shape the	
	coast, through how we use it	
Stage 2 - A	Assessment Evidence	
Performance tasks:	Other Evidence:	
'Your turn' questions in the students' book p.21Workbook Unit 2.4	The following will also be observed, recorded, and considered for the final grade of students in each lesson activity	
Teacher's Handbook, p.38. Ideas for a StarterTeacher's Handbook, p.39. Ideas for Plenaries	Motivation	
 Teacher's Handbook, p.48-49. Further suggestions for class and homework, Activities 20 - 22 	Engagement	
Group presentations	◆Collaboration	
	•Communication pattern among peers and with the teacher	
	•Reactions	
	•Respect to others and different opinions	
Character	2 Learning Dlan	

Stage 3- Learning Plan

Learning Activities:

- •Examine photographs and deduce ways we use the coast
- •Discuss reasons why early settlers chose the coast to settle and decide which of these reasons still apply today
- •Identify port towns and seaside resorts from a map
- •Sketch a mental map
- •Organize work people do into economic sectors
- •Create a chart to show advantages and disadvantages of having a coastline

2.5 Your holiday in Newquay

Stage 1 - Desired Results

Established Goals:

- •Improve and build on mapping skills
- •Understand the impacts of urban development and consider sustainability

Understandings:

Students will understand that...

- •you can identify coastal landforms and learn a lot about a place from a coastal map
- •development impacts an area in many ways

Essential Questions:

- •What do the OS map and photos tell you about the coast of Newquay? Is it flat? Smooth? Any beaches?
- •What impact will increased flights have on the area, its environment and society?
- •Do you think an increase in flight is sustainable?

Knowledge:

Students will know...

- •what sustainability means
- •how to identify features on an OS map

Skills

Students will be able to...

- •identify coastal features on an OS map
- •find places in a photo on an OS map
- •plan and plot a route on a map

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.22
- •Workbook Unit 2.5
- •Teacher's Handbook, p.40. Ideas for a Starter
- •Teacher's Handbook, p.41. Ideas for Plenaries
- •Teacher's Handbook, p.49. Further suggestions for class and homework, Activities 23 − 30
- •Group presentations

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- Respect to others and different opinions

Stage 3- Learning Plan

Learning Activities:

- •Examine maps and photos to find and describe physical features
- •Use a map to collaborate, plan and plot places to stay, things to do and routes to take
- •Discuss and evaluate the impact of developments to a town and its surrounding environment

2.6 How long can Happisburgh hang on?

Stage 1 - Desired Results

Established Goals:

- •Understanding and being able to explain how coastal settlements are at risk from erosion
- •Learning to compare and analyze photographs and maps to identify features and make risk assessments

Understanding and being able to explain the factors that affect the different rates of erosion along the coast

Understandings:

Students will understand that...

- •erosion by the waves can cause cliffs to collapse, and homes to fall into the sea.
- erosion is a particular problem in places along the coast, such as Happisburgh, where the cliffs are soft (made of sand and clay).
- •the cliffs are weakened by weathering, and eroded from below by the sea.
- •rate of erosion is affected by hardness of rock as well as exposure to prevailing winds and waves

Essential Questions:

- •What happens to the material that the waves erode?
- •Does all rock erode at the same speed?
- •If the waves are big and strong, will erosion be faster and slower?
- •Why did people build homes in such a risky place?
- •Can you think of anything that could be done, to save the houses on the cliffs in Happisburgh?

Knowledge:

Students will know...

- erosion happens at different rates along different stretches of coastline
- •which processes form each feature
- •that different kinds of rock erode at different rates
- there are limited ways of defending the coast from erosion

Skills:

Students will be able to...

- define key vocabulary
- explain why coastal erosion is happening so quickly in some places
- •describe the effects of erosion

Stage 2 - Assessment Evidence

Performance tasks:

- 'Your turn' questions in the students' book p.25
- •Workbook Unit 2.6
- •Teacher's Handbook, p.42. Ideas for a Starter
- •Teacher's Handbook, p.43. Ideas for Plenaries
- ●Teacher's Handbook, p.49. Further suggestions for class and homework, Activities 31 33
- Creative and journalistic writing

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Read a newspaper article
- •Compare and analyze aerial photographs and OS maps
- •Locate and identify different features on aerial photographs and OS maps
- •Calculate speed of erosion and identify features at risk
- •Reach and explain conclusions based on photographic evidence

2.7 The war against the sea

Stage 1 - Desired Results

Established Goals:

- •Understanding different approaches to coastal defence and their pros and cons
- •Being able to evaluate the best and most sustainable form of defence for a given area
- •Being able to explain a plan of action with a presentation including maps and charts

Understandings:

Students will understand that...

- •erosion is a big problem on stretches of coast that have soft or fairly soft rock.
- •defences against it include; seawalls; rock armour; reefs; revetments; groynes; and beach replenishment.
- defences are very costly. Maintaining them is likely to be increasingly difficult because of global warming (giving rising sea levels, and more frequent severe storms).
- •the advantages and disadvantages to each type of defence

Essential Questions:

- •What's happening in Happisburgh? Do you think it's the only place where this is happening? Why do you think that?
- •What type of defences would you choose if you wanted something that looked good, and didn't spoil a view?

Knowledge:

Students will know...

- •that there are advantages and disadvantages to each type of defence
- •there is no perfect of permanent defence against erosion

Skills:

Students will be able to...

- •define key vocabulary and explain how each type of coastal defense works
- •identify from a map areas where coastal erosion is a problem
- •Evaluate, make and explain a plan using maps and scale

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.27
- •Workbook Unit 2.7
- •Teacher's Handbook, p.44. Ideas for a Starter
- •Teacher's Handbook, p.45. Ideas for Plenaries
- •Teacher's Handbook, p.49. Further suggestions for class and homework, Activities 34 35
- •Presentation of plan of action

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

• Analyze and look for patterns on a geological map to deduce where erosion is a problem

- Examine and evaluate different forms of coastal defence
- •Decide on the most suitable form of defence with cost analysis and sustainability
- •Present a plan of action to the class including a map drawn to scale

2.8 Defend – or let go?

Stage 1 - Desired Results

Established Goals:

- Learning about conflict over coastal defences
- •Learning about strategies in defence and issues with compensation

Understandings:

Students will understand that...

- putting in and maintaining coastal defences is hugely expensive – and the impact of global warming is likely to make cost escalate.
- •rather than spend billions in fighting a losing battle, the government strategy is now to go for *sustainability:* defend places only if the economic, social and environmental benefits outweigh the costs.
- •under this strategy, some places like Happisburgh will be allowed to slip into the sea.
- people who will lose their homes and land to the sea want compensation.

Essential Questions:

- •How does the government decide which places to defend?
- •Can we really stop the sea eroding places? Why do we bother? What if we didn't bother, and gave people money to move inland instead?
- Suppose the government does pay compensation to people who lose their homes, where will the government get the money?

Knowledge:

Students will know...

- •there is a dilemma about which areas should be defended
- •Coastal defenses are very expensive to build and maintain

Skills:

Students will be able to...

- •define key vocabulary
- •evaluate areas at risk of erosion and their historic, cultural or environmental importance

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.15
- •Workbook Unit 2.8
- •Teacher's Handbook, p.46. Ideas for a Starter
- •Teacher's Handbook, p.47. Ideas for Plenaries
- •Teacher's Handbook, p.49. Further suggestions for class and homework, Activities 36 43
- •Class debate
- •Review of 'Your goals for this chapter' on page 13 of geog.2 students' book

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read conflicting viewpoints on the issue of coastal defence
- •Compare different coastal settlements and their value in terms of population size, current infrastructure, history and natural environment.
- •Examine and explain the government's strategy in coastal defence

3.1 It's the weather!

Stage 1 - Desired Results

Established Goals:

•Ability to say what whether is and describe different weather conditions

Understandings:	Essential Questions:
Students will understand	•What is weather?
• that weather is the state of the atmosphere	
•that weather changes from time to time and place to place •how weather affects our activities	•What's the weather like today?
	•What's the weather like in different places?
	•What causes weather?
Knowledge:	Skills:
Students will know	Students will be able to
•different kinds of weather	•describe weather by examining photographs
•weather affects our activities	•give definitions of weather
- Weditief directs our detivities	8

Stage 2 - Assessment Evidence

Performance t	asks:

- \bullet 'Your turn' questions in the students' book p.33
- •Workbook Unit 3.1
- •Teacher's Handbook, p.52. Ideas for a Starter
- •Teacher's Handbook, p.53. Ideas for Plenaries
- •Teacher's Handbook, p.72. Further suggestions for class and homework, Activities 1 − 4

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Analyze and describe photos of different weather conditions
- •Make deductions from photographic evidence

•Explain how weather affects our activities

3.2 So what causes weather?

Stage 1 - Desired Results

Established Goals:

- •Understanding how weather conditions are produced
- •Learning about the different layers of the atmosphere and where weather occurs

Understandings:

Students will understand that...

- •the sun and the water vapor are the two causes of weather.
- •this is how they work together to give weather: the sun warms the earth which in turn warms the air; warm air rises, and cools as it does so; that causes water vapor to condense – so we get clouds are rain; but the rising air also leads to low pressure; so air rushes in from elsewhere; as wind.
- depending on the temperature, precipitation may be in the form of hail, sleet, or snow, instead of rain. In addition, when it's cold, water vapor may condense much lower down in the atmosphere, giving fog, mist, or dew.
- •the sun and water vapor are the two key cause s of weather.
- •most water vapor is in the lowest level of the atmosphere the troposphere, where we live.

Essential Questions:

- •What causes weather?
- •What the weather like today? Why?
- •What is condensation? Why does it happen?

Knowledge:

Students will know...

- •where weather occurs
- •weather cannot occur without an atmosphere, heat and water vapour

Skills:

Students will be able to...

- •define key vocabulary
- •describe how the sun and water vapour together produce weather conditions

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.35
- •Workbook Unit 3.2
- •Teacher's Handbook, p.54. Ideas for a Starter
- •Teacher's Handbook, p.55. Ideas for Plenaries
- •Teacher's Handbook, p.72. Further suggestions for class and homework, Activities 5 & 6

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read about and study diagrams showing the causes of weather
- •Examine a diagram of the layers of the atmosphere
- •Complete a cloze paragraph explaining how the sun and water vapour cause weather
- •Investigate ways to prove the existence of water vapour in the atmosphere

3.3 Measuring the weather

Stage 1 - Desired Results

Established Goals:

•Learning how weather is measured

Understandings:

Students will understand that...

- •weather is a state of the atmosphere around us.
- •we can tell a lot about the weather by looking and feeling, but to get a clear picture we must take measurements.
- there is equipment for measuring each component of weather; and each component has its own units of measurement.
- •weather measurements are taken continually, all around the world, 24 hours a day, at different heights above the Earth, using a whole range of methods.

Essential Questions:

- •What's the atmosphere? Where is it?
- •How could you tell how warm or cold somewhere? Where is could you measure?
- •Why is the weather so important that people measure it all the time, all around the world?

Knowledge:

Students will know...

- •what instruments are used to measure different components of weather
- •the units of measurement weather components are given in

Skills:

Students will be able to...

- define the key vocabulary
- •read a weather map
- identify different components of weather, say what equipment/instruments are used to measure them, and give the units of measurement

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.36-37
- Workbook Unit 3.3
- •Teacher's Handbook, p.56. Ideas for a Starter
- •Teacher's Handbook, p.57. Ideas for Plenaries
- Teacher's Handbook, p.72. Further suggestions for class and homework, Activities 7-12
- •Record the weather and give a presentation

Other Evidence:

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read a weather map
- •Assess cloud cover from a photo
- Match terms to definitions
- •Identify an instrument's use
- •Taking real-life measurements

3.4 More about rain and clouds

Stage 1 - Desired Results

Established Goals:

•Learning about the three main rain types and the three main cloud types

Understandings:

Students will understand that...

- •rain forms when air containing water vapor rises.
- when air rises, it cools; the water vapor condenses into tiny droplets; these form clouds. When the droplets join we get rain.
- •air rises for different reasons so we give the rainfall different names.
- convectional rainfall means air rises because the ground warms it up. Relief rainfall means the wind rises on meeting high ground. Frontal rainfall means a warm air mass slides up, or is pushed up, over a cold air mass.
- •a place could get all three types of rainfall, but one is likely to predominate, depending on the physical geography and the season.
- •clouds come in different shapes and sizes, depending on many factors, including how fast the air rose.

Essential Questions:

- •Why does it rain?
- •Why does water vapor condense?
- •Why does air rise?
- •Can you think of anything else that would make air rise?
- •Which is more likely to get convectional rainfall, Milton Keynes or Aberdeen? Why?
- Which is more likely to get relief rainfall, Norwich or Swansea? Why?

Knowledge:

Students will know...

- •what causes air to rise and clouds to form
- •that there are different kinds of cloud and different kinds of rainfall with different names

Skills:

Students will be able to...

- define key vocabulary
- •describe the key steps in formation of rain
- name the different types of rainfall and say how each is formed
- •explain what clouds are and identify the main cloud types

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.39
- •Workbook Unit 3.4
- •Teacher's Handbook, p.58. Ideas for a Starter
- •Teacher's Handbook, p.59. Ideas for Plenaries
- •Teacher's Handbook, p.72. Further suggestions for class

Other Evidence:

- Motivation
- Engagement

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and homework, Activities 13 – 15	◆Collaboration	
	●Communication pattern among peers and with the	
	teacher	
	•Reactions	
	•Respect to others and different opinions	
Stage 3	– Learning Plan	
Learning Activities:		
 Analyze and explain what is shown in diagrams 		
•Examine photographs and make deductions from pho	otographic evidence	
 Apply logical thought to explain a sequence of events 	;	

3.5 Air pressure and weather

Stage 1 - Desired Results

Established Goals:

•Understanding the causes of high and low pressure and the weather conditions associated with each

Understandings:

Students will understand that...

- •air pressure is the force of pressure the air exerts on surfaces.
- •low pressure is when warm air rises. Rising air means water vapor condenses, giving clouds and rain. At the same time, air rushes in from other places at higher pressure, as wind. So low pressure means clouds, rain, and winds.

•Analyze a map to make explain weather patterns

- •when warm air rises in one place, cold heavy air sinks somewhere else.
- •high pressure is where cold heavy air sinks, air pressure rises. And this time no clouds form because the air warms up as it sinks towards the Earth, so its water vapor does not condense.
- •in summer high pressure means bright sunshine and hot days; since there is no cloud to keep the heat in, evenings can be cool.
- •in winter, high pressure means bright clear days. Since there is no cloud to keep heat in, it gets really cold when the sun goes down. You get ice and frost.

Essential Questions:

- •What kind of air pressure do you think we have today? Why do you think that? How could you find out for certain?
- •Why do meteorologists keep measuring air pressure?
- •Can you explain why air pressure falls as you go up a high mountain?

Knowledge:

Students will know...

- •that air pressure is the weight of the air pressing down
- •that it is caused by rising of falling air caused by differences in temperature

Skills:

Students will be able to...

- define the key vocabulary
- •explain in simple terms what air pressure is
- •describe high and low pressure weather in winter and summer

ions associated with high

•about different weather conditions associated with high and low pressure

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.41
- •Workbook Unit 3.5
- •Teacher's Handbook, p.60. Ideas for a Starter
- •Teacher's Handbook, p.61. Ideas for Plenaries
- •Teacher's Handbook, p.72-73. Further suggestions for class and homework, Activities 16 21

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions

Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Study diagrams explaining high and low pressure
- •Examine photographs of high pressure weather in winter and summer
- •Think of examples of jobs affected by air pressure, explain with reasons
- •Plan outdoor activities based on knowledge of air pressure

3.6 Why is our weather so changeable?

Stage 1 - Desired Results

Established Goals:

•Understanding air masses and fronts

Understandings:

Students will understand that...

- •air moves around the world in huge 'blocks' of air called air masses.
- •air masses differ from each other in temperature and moisture content. They can be hot or cold, damp or dry, depending on where they came from.
- •because they have different characteristics, air masses can clash when they meet, leading to rapid changes in the weather.
- •the leading edge of an air mass is called a front. Fronts have special symbols on weather map: red frills for a warm front and blue teeth for a cold one.
- when warm front meets a cold air mass, it slides up over it. When cold front meets a warm air mass it drives sharply under it, pushing it upwards. Either way the rising warm air leads to clouds, rain and wind.
- the unsettled weather eases off when the new air mass has taken over.

Essential Questions:

- •What was the weather like last week? The day before yesterday? Yesterday? What is it like today?
- •Why do you think weather changes from day to day?
- •What would air over the Sahara Desert be like? How would it affect our weather if it drifted over the UK?
- •What might air over the North Pole be like? How would it affect our weather if it drifted over the UK?

Knowledge:

Students will know...

- •that an air mass is a huge block of air with a set of characteristics
- that a front is the leading edge of an air mass and it changes the weather conditions

Skills:

Students will be able to...

- define and explain key vocabulary
- explain why different air masses have different characteristics
- explain how the arrival of an air mass leads to a change in the weather
- •draw symbols for cold and warm fronts

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.43
- •Workbook Unit 3.6
- •Teacher's Handbook, p.62. Ideas for a Starter
- •Teacher's Handbook, p.63. Ideas for Plenaries
- •Teacher's Handbook, p.73. Further suggestions for class and homework, Activities 22 & 23

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions

Respect to others and different opinions

Stage 3 - Learning Plan

- •Define what an air mass is
- •Draw conclusions about air masses, from maps
- •Make a prediction about the weather based on the arrival of air masses
- Present a weather forecast

•Study a time-lapse video of satellite images of weather

3.8 From weather to climate

Stage 1 - Desired Results

Established Goals:

- •Understanding and explaining the difference between weather and climate
- •Applying knowledge and skills to produce a climate graph

Understandings:

Students will understand that...

- •Understand that climate is the 'average' weather at a place; it tells you what the weather tends to be like there, at a particular time of year.
- •Understand that climate is worked out by taking weather measurements over a long period (usually 30 years), and then calculating the average.
- •Understand that the UK has an equitable climate, without extremes. But the climate varies across the UK, and it's possible to identify four climate zones.
- •Understand that a climate graph shows temperature and rainfall over the year, on the same time axis. The temperature is shown as a line graph, and the rainfall as a bar graph.

Essential Questions:

- •What is weather?
- •What is climate?
- •How would you describe the climate in the UK compared with the Sahara desert, or the Arctic?
- •Why do they choose temperature and rainfall for a climate graph, instead of rainfall and hours of sunshine, for example?

Knowledge:

Students will know...

- •the difference between weather and climate
- •that a single country can have different climate zones

Skills:

Students will be able to...

- •define and explain key vocabulary
- •explain the difference between climate and weather
- •read, and draw, a climate graph

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.47
- Workbook Unit 3.8
- •Teacher's Handbook, p.66. Ideas for a Starter
- •Teacher's Handbook, p.67. Ideas for Plenaries
- •Teacher's Handbook, p.73. Further suggestions for class and homework, Activity 27

Other Evidence:

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher

•	Rea	cti	ons

•Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- Distinguish between weather and climate
- •Analyze a data table and pick out relevant data
- •Draw a climate graph
- •Compare climate graphs

3.9 The factors that influence climate

Stage 1 - Desired Results

Established Goals:

•Understanding and explaining the factors that influence climte

Understandings:

Students will understand that...

- •Understand that climate is the net result of several factors.
- •Understand that the main one is latitude, or distance from the equator. Overall, as you move away from the equator, temperature falls.
- Understand that the next important one, especially for mid-latitude countries like the UK, is the tilt of the Earth's axis as it travels around the sun. This gives us our distinct season.
- Understand that other factors also play a part, and can greatly modify the effect of latitude. For example, you will find glaciers up high mountains, even near the equator.

Essential Questions:

- •Can you imagine a country that's hotter than the UK? That's colder? Can you explain why?
- •Which part of the Earth gets the strongest light? Which part gets least light?
- •Why is Swansea warmer than Reading in winter?
- •Why is Reading warmer than Swansea in summer?
- •Why is it always colder on Ben Nevis than in Aberdeen?
- •Why is London warmer than Edinburgh?
- •Why does Swansea get more rain than Ipswich?
- •Why is the weather quite mild all year on the Isles of Scilly.

Knowledge:

Students will know...

- •that latitude is the chief factor that influences climate
- Other factors include altitude, the Earth's tilt, prevailing wind direction, distance from the coast and ocean currents

Skills:

Students will be able to...

- •define key vocabulary
- •give six factors that influence climate
- •explain how these factors affect climate

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.49
- •Workbook Unit 3.9

Other Evidence:

- •Teacher's Handbook, p.68. Ideas for a Starter
- •Teacher's Handbook, p.69. Ideas for Plenaries
- •Teacher's Handbook, p.73. Further suggestions for class and homework, Activities 28 35
- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- Draw a spider map to show factors that influence weather
- •Analyze maps and apply learned knowledge to explain climate differences
- •Make logical deductions based on a region's geographical location
- •Explain why it is colder at higher altitudes

3.10 Climates around the world

Stage 1 - Desired Results

Established Goals:

•Understanding that climates vary around the world and why

Understandings:

Students will understand that...

- •the world can be divided into big regions, each with its own distinctive climate.
- •the differences between these regions are due to the factors given in Unit 3.9
- within a climate region, the climate will vary from place to place. But overall, it is broadly similar throughout the region.

Essential Questions:

- •Which seems to be the largest climate region?
- •Where are the world's coldest regions? Why?
- •Which climate region is the UK in? Name four other countries with similar climates.
- •What do you notice about the climate along the equator?
- •About what fraction of the Earth's surface gets little or no reliable rain?

Knowledge:

Students will know...

- •different climate regions
- •the factors that affect climate

Skills:

Students will be able to...

- explain the key vocabulary
- •describe and locate at least four different climate regions

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.51
- •Workbook Unit 3.10

Other Evidence:

- •Teacher's Handbook, p.70. Ideas for a Starter
- •Teacher's Handbook, p.71. Ideas for Plenaries
- •Teacher's Handbook, p.73. Further suggestions for class and homework, Activities 36 37
- •Review of 'Your goals for this chapter' on page 31 of geog.2 students' book
- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions

Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Examine a map showing different climate regions
- •Identify climates in different areas by comparing a climate map to a political map
- •Examine a map showing ocean currents and mountain ranges and explain how they affect climate
- Analyze data from a climate graph and apply the information to make deductions and find a location on a map

4.1 Climate and ecosystems

Stage 1 - Desired Results

Established Goals:

- •Understanding what an ecosystem is and that there is interdependence within an ecosystem
- •Being able to describe and ecosystem
- •Understanding that climate is the driving force of different ecosystem and that plants and animals adapt to it

Understandings:	Essential Questions:	
Students will understand that	•What does ecosystem mean?	
•Understand what an ecosystem is	,	
•Understand that climate plays the key role in determining what an ecosystem is like	•What does environment mean?	
•Understand that the Earth can be divided into large ecosystems, corresponding to its climate regions, each	•What does adapt mean?	
with its own types of plants and animals	•What does biome mean?	
	•What do you think is the connection between habitat and an ecosystem?	
Knowledge:	Skills:	
Students will know	Students will be able to	
•what an ecosystem is	•define and explain key vocabulary	
•different kinds of ecosystems	•name four of the Earth's large ecosystems	
	•explain why climate is the driving force behind ecosystems	
Stage 2 - Assessment Evidence		

Other Evidence:

Unit Mapping - TOEFL Beginner

Performance tasks:

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- •'Your turn' questions in the students' book p.55
- •Workbook Unit 4.1
- •Teacher's Handbook, p.76. Ideas for a Starter
- •Teacher's Handbook, p.77. Ideas for Plenaries
- •Teacher's Handbook, p.90. Further suggestions for class and homework, Activities 1 − 9

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read about and study photos of different ecosystems
- •Use geographical imagination to describe sensory experiences of an ecosystem
- •Analyze climate graphs and match them to given ecosystems
- Classify plants and animals into ecosystems

4.2 The tropical rainforests

Stage 1 - Desired Results

Established Goals:

- •Understanding the adaptations rainforests have for a hot, wet climate
- •Learning about features and life within the tropical rainforest ecosystem

Understandings:

Students will understand that...

- •tropical rainforests lie within the tropics, where the hot wet climate promotes lush plant growth
- •competition for sunlight has led to four distinct layers of vegetation. The vegetation also shows other adaptations, such as response to heavy rainfall.
- the top layer of soil in rich in nutrients from dead leaves and animal waste but these nutrients are quickly reabsorbed by the constantly growling forest, so the soil below is quite poor.

Essential Questions:

- •Where are the tropical rainforests located and why?
- •What adaptions has this ecosystem made to suit its climate?
- •What plants and animals make up this ecosystem?
- •Why are the rainforests important to us?

Knowledge:

Students will know...

- •where the tropical rainforests are located
- •the adaptions of this ecosystem to its climate
- $\bullet some \ plants \ and \ animals \ that \ make \ up \ this \ ecosystem$
- •that most of the animals live in the canopy

Skills:

Students will be able to...

- define/explain key vocabulary
- •describe the rainforest climate
- name and describe the four layers of the rainforest, and give at least three other examples of adaptations

- •why the soil is poor below the surface
- •that the rainforest is the original source of many food crops and medicines we now take for granted
- •explain why the soil is poor below the surface
- name at least three rainforest animal

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.57
- •Workbook Unit 4.2
- •Teacher's Handbook, p.78. Ideas for a Starter
- •Teacher's Handbook, p.79. Ideas for Plenaries
- •Teacher's Handbook, p.90. Further suggestions for class and homework, Activities 10 15
- Class discussion

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read about and examine the features and adaptations of the rainforest
- •Complete statements using information from the text
- Arrange sentences in a logical sequence to create a flowchart describing the cycle of nutrients in the rainforest
- •Sketch and label a cross-section of the rainforest to show the layers of vegetation and their features
- •Respond to an opinion with supported by facts learned about the rainforest

4.3 What are we doing to the rainforests?

Stage 1 - Desired Results

Established Goals:

- •Understanding the damage we are doing to our rainforests and why
- •Understanding the potential consequences of destroying this ecosystem

Understandings:

Students will understand that...

- •we have lost over half of the Earth's tropical rainforests, mostly in the last 50 years.
- •80% of the world's rainforests are found in just 10 countries and about 50% is found in Brazil, Indonesia and DRC.
- •rainforest is cleared for farming, cattle ranching, logging, mineral exploitation, road building and dams.
- the crops, meat and timber are mainly for export, so it is big business.

Essential Questions:

- •Which countries have the most tropical rainforests?
- •What resources do we take from the rainforests?
- •How quickly is the rainforest disappearing?

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Knowl	'edge:

Students will know...

- •which countries have the most rainforest
- •why rainforests are being destroyed
- •what the consequences of losing the rainforests would be

Skills:

Students will be able to...

- define key vocabulary
- explain why the rainforest is being destroyed
- •describe the local and worldwide consequences of rainforest destruction

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.59
- •Workbook Unit 4.3
- •Teacher's Handbook, p.80. Ideas for a Starter
- •Teacher's Handbook, p.81. Ideas for Plenaries
- •Teacher's Handbook, p.91. Further suggestions for class and homework, Activities 16 & 17
- •Class debate

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

Learning Activities:

- •Read a text about the plight of the world's rainforests and a case study of Indonesia's rainforests
- •Analyze a map, saying which continents countries are in
- •Use a map to deduce geographical facts
- •Interpret a bar graph and describe trends
- •Make connections and explain by displaying information in a cartoon flow chart
- •Respond to opinions using facts and reasonable arguments

4.4 New hope for the rainforests?

Stage 1 - Desired Results

Established Goals:

- Understanding the link between rainforests and global warming
- Being able to evaluate a possible solution to the problem of rainforest destruction

Understandings:

Students will understand that...

- •rainforests continue to be lost because so many people benefit economically from its exploitation
- •rainforests take in carbon dioxide during photosynthesis and rainforests account for about 40% of the carbon locked up in biomass around the world
- •when rainforests are burned, or tree stumps are left to rot, that carbon is released leading to global warming
- •If rich countries pay poorer countries to protect their rainforests, they are helping all countries in the world and this is an example of 'local action, global effects.'

Essential Questions:

- •What is global warming and why is it bad news?
- •What causes global warming?
- •What are we destroying the rainforests?
- •Why should countries without rainforests pay countries with rainforests to protect those forests?

Knowledge:

Students will know...

- •what causes global warming
- •why the rainforests are so valuable environmentally and economically
- •the conflict that exists in managing the rainforests

Skills:

Students will be able to...

- explain key vocabulary
- •explain the link between rainforests and global warming
- •explain why richer countries may be prepared to pay for rainforests to be protected
- describe how technology could be used to help guard the rainforests

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.61
- •Workbook Unit 4.4
- •Teacher's Handbook, p.82. Ideas for a Starter
- •Teacher's Handbook, p.83. Ideas for Plenaries
- •Teacher's Handbook, p.91. Further suggestions for class and homework, Activities 18 23
- •Review of 'Your goals for this chapter' on page 53 of geog.2 students' book

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Read and examine texts about the destruction of the rainforests and the consequences
- •Read and examine a case study of Indonesia's rainforests
- •Complete sentences to explain processes involved in the carbon cycle and global warming
- •Empathize and explain points of views and actions
- •Analyze and identify features from a satellite photo to make deductions about a situation
- •Write and present an action plan to protect a local area of rainforest
- •Examine, explain and evaluate the scheme to protect Indonesia's rainforests

4.5 The Arctic Tundra

Stage 1 - Desired Results

Established Goals:

- •Understanding the adaptations the Artic tundra ecosystem has for a harsh, cold climate
- •Learning about features and life within the Arctic tundra

Understandings:

Students will understand that...

- •the Arctic Tundra ecosystem lies within the Arctic Circle
- •the climate is harsh, with bitterly cold, dark winters, cool short summers, strong biting winds and low precipitation
- many plants and animals have adapted to these harsh conditions
- •the soil under the surface is permanently frozen and it's called permafrost

Essential Questions:

- •Where is the Arctic tundra ecosystem located?
- •What adaptions has this ecosystem made to suit its climate?
- •What plants and animals make up this ecosystem?

Knowledge:

Students will know...

- •where the Arctic tundra is located
- •the adaptions of this ecosystem to its climate
- •some plants and animals that make up this ecosystem
- •what permafrost is and why it exists

Skills:

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.63
- •Workbook Unit 4.5
- •Teacher's Handbook, p.84. Ideas for a Starter
- •Teacher's Handbook, p.85. Ideas for Plenaries
- •Teacher's Handbook, p.91. Further suggestions for class and homework, Activities 24 26
- Class discussion

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Read about and examine the features and adaptations of the Arctic tundra
- •Compare an ecosystem map and a political map to identify countries that share the Arctic tundra
- Arrange sentences in a logical sequence to create a flowchart describing the cycle of nutrients in the rainforest
- •Read a climate graph to gather information and make logical deductions

4.6 Humans in the Arctic Tundra

Stage 1 - Desired Results

Established Goals:

- •To know about life for the people of the Arctic tundra
- •To understand how climates and ecosystems affect human life

Understandings:

Students will understand that...

- only 10% of the inhabitants of the Arctic tundra are indigenous, the rest are descended from fur traders and more recent arrivals working in oil, gas and mining industries.
- •There are several indigenous groups with different languages. They share traditions of hunting, fishing and herding reindeer but the traditional way of life is changing.

Essential Questions:

- •Who lives in the Arctic tundra?
- •What is life like there?
- •What are the challenges of living in such a harsh environment?
- •Why have recent arrivals moved there?
- •How and why is life changing for indigenous groups of people?

Knowledge:

Students will know...

- •Which groups of people live in the Arctic tundra
- •What the traditional way of life in the tundra was like
- •About the industries and recent arrivals to the tundra

Skills:

Students will be able to...

- define and explain key vocabulary
- •describe two groups of people living in the Arctic tundra
- •give examples of how and why life is changing for the indigenous people

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.65
- •Workbook Unit 4.6
- •Teacher's Handbook, p.87. Ideas for a Starter
- •Teacher's Handbook, p.88. Ideas for Plenaries
- •Teacher's Handbook, p.91. Further suggestions for class and homework, Activities 27 & 28

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 - Learning Plan

- •Read about life for different groups of people in the Arctic tundra
- •Analyze photos and use geographical imagination to describe the challenges of life in the tundra
- •Calculate and compare population densities in different regions of the world
- •Write an email explaining why you would choose to accept of decline a job offer in the arctic tundra

4.7 Tundra under threat

Stage 1 - Desired Results

Established Goals:

•Understanding what is threating the Arctic Tundra ecosystem and what the devastating results are

Understandings:

Students will understand that...

- •many animals of the Arctic tundra are overhunted by both locals and outsiders
- •the ecosystem is also being disrupted by the exploration and extraction of fuels and minerals
- •global warming is the greatest threat to the tundra and warming is happening faster in the Arctic than elsewhere
- when permafrost melts, it releases vast quantities of carbon dioxide and methane, which in turn accelerate global warming

Essential Questions:

- •What is threatening the Arctic tundra?
- How does the exploration for, and extraction of minerals, ores and fuels affect the tundra?
- •How is global warming affecting the tundra?
- •What will happen if the permafrost thaws?

Knowledge:

Students will know...

- •Why the Arctic tundra is under threat
- •What the results of melting permafrost will be

Skills:

Students will be able to...

- explain key vocabulary
- •list three threats to the Arctic ecosystem
- •explain why global warming is the biggest threat of all
- explain why thawing of the permafrost is expected to accelerate global warming

Stage 2 - Assessment Evidence

Performance tasks:

- •'Your turn' questions in the students' book p.67
- •Workbook Unit 4.7
- •Teacher's Handbook, p.89. Ideas for a Starter
- •Teacher's Handbook, p.90. Ideas for Plenaries
- •Teacher's Handbook, p.91. Further suggestions for class and homework, Activities 29 34
- •Class debate
- Review of 'Your goals for this chapter' on page 53 of geog.2 students' book

Other Evidence:

The following will also be observed, recorded, and considered for the final grade of students in each lesson activity

- Motivation
- Engagement
- Collaboration
- •Communication pattern among peers and with the teacher
- Reactions
- •Respect to others and different opinions

Stage 3 – Learning Plan

- •Read and examine a text and news reports about the threats to the Arctic tundra
- •Study a photo, empathize and explain opinions
- •Rank threats to the tundra by order of importance with reasons

- •Respond to other opinions and form a debate
- •Classify results as either local or global and explain